

**WHAT IS CLAIMED IS:**

1           1.     A circuit board comprising:  
2           a first conductive pad;  
3           a second conductive pad;  
4           a capacitive element connected between the first and the second conductive  
5           pads; and  
6           a series-resonant impedance coupled to the first pad, the series-resonant  
7           impedance comprising a serpentine conductor and a tuning  
8           capacitance.

1           2.     A circuit board as defined in Claim 1, wherein the serpentine  
2     conductor is formed from a conductor that is printed on the circuit board.

1           3.     A circuit board as defined in Claim 2, wherein tuning capacitance is  
2     planar in form.

1           4.     A circuit board as defined in Claim 3, wherein the tuning capacitance  
2     is printed on the circuit board.

1           5.     A circuit board as defined in Claim 1, wherein the serpentine  
2     conductor comprises:  
3           a plurality of substantially linear segments;  
4           an originating segment coupling a first linear segment to the first pad;  
5           a terminating segment coupling a second linear segment to the capacitance;  
6           and  
7           a turn coupling two adjacent linear segments.

1           6.     A circuit board as defined in Claim 1, wherein serpentine conductor  
2     comprises:  
3           at least one intermediate linear segment;  
4           a first turn coupling the originating segment to the first linear segment;

0991229.031501

5 a second turn coupling the first linear segment to an intermediate linear  
6 segment; and  
7 a second turn coupling an intermediate linear segment to the second linear  
8 segment.

1 7. A circuit board as defined in Claim 6, wherein the serpentine  
2 conductor has a length (L) and a width (W) and wherein the respective lengths of the  
3 turns establishes a space (S) between adjacent linear segment and wherein the number  
4 of turns is equal to N, and wherein S, L, W and N are chosen so that the serpentine  
5 conductor is at least approximately series resonant with the tuning capacitance at a  
6 significant frequency  $F^0$ .

1 8. A circuit board as defined in Claim 7, wherein the tuning capacitance  
2 is substantially rectangular.

1 9. A circuit board as defined in Claim 8, wherein the linear segments are  
2 respectively mutually parallel.

1 10. A computer system comprising:  
2 a printed circuit board;  
3 at least one integrated circuit device mounted on the printed circuit board, the  
4 integrated circuit device having a significant frequency,  $F_0$ ;  
5 an active conductor coupled to the integrated circuit device;  
6 a reference conductor coupled to the integrated circuit device;  
7 a first pad coupled to the active conductor;  
8 a second pad coupled to the reference conductor;  
9 a capacitor coupled between the first pad and the second pad; and  
10 means coupled to the capacitor for attenuating signals at  $F_0$ , the means  
11 comprising a serpentine conductor and a tuning capacitance.

1 11. A computer system as defined in Claim 10, wherein the reference  
2 conductor provides a ground potential to the integrated circuit device.

1

1

1

1

1

1

1

1           19.     A circuit board as defined in Claim 18, wherein the serpentine  
2 conductor has a length (L) and a width (W) and the respective lengths of the turns  
3 establishes the space (S) between adjacent linear segments and wherein the number of  
4 turns is equal to N, and wherein S, L, W and N are chosen so that the serpentine  
5 conductor is at least approximately series resonant with the capacitance at a  
6 significant frequency  $F_o$ .

1           20.     A circuit board as defined in Claim 19, wherein the tuning capacitance  
2 is substantially rectangular.

1           21.     A circuit board as defined in Claim 20, wherein the linear segments are  
2 respectively mutually parallel.

1           22.     A method of enabling the suppression of spurious signals in electronic  
2 equipment, the method comprising:  
3           attaching a discrete capacitor to a printed circuit board (PCB) between a power  
4 pad and a reference pad;  
5           depositing an inductance on the PCB so that the inductance is connected at a  
6 first end to the power pad;  
7           forming a tuning capacitance on the PCB so that the tuning capacitance is  
8 connected to a second end of the inductance; and  
9           causing the inductance and tuning capacitance to be dimensioned so that the  
10 inductance and tuning capacitance are substantially series resonant at a  
11 predetermined frequency,  $F_o$ .

1           23.     A method as defined in Claim 22, wherein the inductance is deposited  
2 to form:  
3           a plurality of substantially linear segments;  
4           an originating segment coupling a first linear segment to the first pad;  
5           a terminating segment coupling a second linear segment to the capacitance;  
6           and  
7           a turn coupling two adjacent linear segments.

1

2

3

- 4

5

6

7

1           28.    A method as defined in Claim 25, wherein the inductance is deposited  
2   in a manner so that:

- 3           (i)     the inductance has a length (L) and a width (W);  
4           (ii)    respective lengths of the turns establishes a space (S) between adjacent  
5           linear traces;  
6           (iii)   the number of turns is equal to (N); and  
  
7           (iv)    S, L, W, S and N establish a magnitude of the inductance such that the  
8   inductance is at least approximately series resonant with the tuning capacitance at  $F_0$ .

1           29.    In an electronic equipment, a circuit for attenuating spurious signals at  
2   high frequencies, the circuit comprising:

- 3           a power pad;  
4           a reference pad;  
5           a discrete capacitor coupled between the power pad and the reference pad;  
6           a ground plane; and  
7           a printed circuit LC network connected to the power pad and coupled to the  
8           ground plane, and resonant at a predetermined frequency of a spurious  
9           signal, the LC network comprising:  
10           a capacitive element;  
11           a plurality of substantially linear segments;  
12           an originating segment coupling a first linear segment to the  
13           power pad;  
14           a terminating segment coupling a second linear segment to the  
15           capacitive element; and  
16           a turn coupling two adjacent linear segments.

1           30.    A circuit as defined in Claim 29, wherein the LC network further  
2   comprises:

- 3           at least one intermediate linear segment;  
4           a first turn coupling the originating segment to the first linear segment;

5 a second turn coupling the first linear segment to an intermediate linear  
 6 segment;  
 7 a second turn coupling an intermediate linear segment to the second linear  
 8 segment; and  
 9 a third turn coupling an intermediate segment to the second linear segment.

1 31. A circuit as defined in Claim 29, wherein the capacitive element is  
 2 formed by affixing a planar conductor on a first surface of a printed circuit board in  
 3 proximity with the ground plane.

1 32. A circuit as defined in Claim 31, wherein the ground planes is affixed  
 2 to a second surface of the printed circuit board.

1 33. A circuit as defined in Claim 31, wherein the LC network further  
 2 comprises:  
 3 at least one intermediate linear segment;  
 4 a first turn coupling the originating segment to the first linear segment;  
 5 a second turn coupling the first linear segment to an intermediate linear  
 6 segment;  
 7 a second turn coupling an intermediate linear segment to the second linear  
 8 segment; and  
 9 a third turn coupling an intermediate segment to the second linear segment.

1 34. A circuit as defined in Claim 34, wherein the linear segments are  
 2 mutually substantially parallel.

1 35. A circuit as defined in Claim 33, wherein the printed circuit LC  
 2 network comprises a number, N, substantially linear segments, each having a width,  
 3 W, and mutually-spaced from an adjacent linear segment by a distance, S, where N,  
 4 W and S are chosen to form an inductance that in combination with the capacitive  
 5 element and the discrete capacitor effects substantial attenuation at the predetermined  
 6 frequency.

1           36. In an electronic equipment, a circuit module comprising:  
2           a printed circuit board having a top surface and a bottom surface;  
3           a first conductive pad;  
4           a second conductive pad;  
5           a ground plane;  
6           a capacitor coupled between the first and the second conductive pads; and  
7           means, including an inductance and a capacitance, coupled to the first pad for  
8           suppressing spurious signals at a predetermined frequency.

1           37. A circuit module as defined in claim 36, wherein the means consists  
2           essentially of a conductive trace disposed on the printed circuit board.

1           38. A circuit module as defined in Claim 1, wherein the means comprises:  
2           a plurality of substantially linear segments;  
3           an originating segment coupling a first linear segment to the first pad;  
4           a terminating segment coupling a second linear segment to the capacitance;  
5           and  
6           a turn coupling two adjacent linear segments.

1           39. A circuit module as defined in Claim 39, wherein the means  
2           comprises:  
3           at least one intermediate linear segment;  
4           a first turn coupling the originating segment to the first linear segment;  
5           a second turn coupling the first linear segment to an intermediate linear  
6           segment; and  
7           a third turn coupling an intermediate linear segment to the second linear  
8           segment.

0031229.001601